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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,793	06/06/2001	Kai D. Feng	CA920000007US1	1725

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EXAMINER

PYO, KEVIN K

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/681,793

Applicant(s)

FENG ET AL

Examiner

Kevin Pyo

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1 ☒ Certified copies of the priority documents have been received.  
2 ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1 ☐ Notice of References Cited (PTO-892)
- 2 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-846)
- 3 ☐ Information Disclosure Statement(s) (PTO-1449) Paper 1 (last 5)
- 4 ☐ Interview Summary (PTO-413) Paper 1 (last 5)
- 5 ☐ Notice of Informal Patent Application (PTO-15)
- 6 ☐ Other

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*Drawings*

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens (5,773,815) in view of Taylor (5,343,169).

Regarding claims 1 and 7, Stevens shows in Fig.3 the following elements of applicant's invention: a) first and second transimpedance amplifier (2 and 5); and b) a photodiode (1) having

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a first end (12) connecting to an inverting input (17) of the first transimpedance amplifier (2) and a second end (13) connected to an inverting input (20) of the second transimpedance amplifier (5), wherein when higher and lower voltages ( $V_{BIAS+}$  and  $V_{BIAS-}$ ) are respectively applied to the non-inverting inputs of the first and second transimpedance amplifiers, a substantially constant bias voltage is maintained on the photodiode (col.2, lines 62-67). Although the circuitry (Fig.3) of Stevens does not disclose the use of a differential amplifier, it is well known in the art to utilize a two-stage amplifier network, as shown by Fig.3 of Taylor, comprising a differential amplifier (330) having input nodes coupled to the output nodes of transimpedance amplifiers (100 and 101)) in view of providing a two-stage design for high gain and high stability (col.4, lines 3-20). It would have been obvious to one of ordinary skill in the art to couple a differential amplifier to the outputs of the transimpedance amplifiers (2 and 5) in view of providing a two-stage design for high gain and high stability. Although the circuit of Stevens in view of Taylor does not disclose that inputs of the differential amplifier should AC coupled to the outputs of the transimpedance amplifiers, such an AC coupling would have been obvious to one of ordinary skill in the art in view of providing the effective performance of a differential amplifier by reducing the burden on the differential amplifier by elimination of the common input level

Regarding claims 2 and 8, Taylor show in Fig 2 a feedback resistor

Regarding claims 3 and 9, Taylor discloses a DC current source (349, 369)

Regarding claims 4, 5, 10 and 11, the limitations therein are disclosed in col.4, lines 27-

30.

Regarding claims 6 and 12, the limitation therein is disclosed in col.3, lines 34-64

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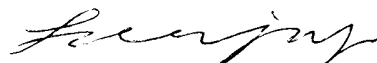
*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taylor is cited for disclosing a transimpedance amplifier.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Pyo whose telephone number is 703-308-4841. The examiner can normally be reached on Mon-Fri (with flexible hour), First Mon. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Kevin Pyo  
Primary Examiner  
Art Unit 2878

pkk  
May 12, 2003